

## Section 2-5: Postulates and Paragraph Proofs

By the end of this lesson, you should be able to answer:

- How do you identify and use basic postulates about points, lines, and planes?
- How do you write paragraph proofs?

Define the following:

1. Postulate
2. Axiom
3. Proof
4. Theorem
5. Deductive Argument
6. Paragraph Proof
7. Informal Proof

*Harkening back to Chapter 1:* We learned a lot about points, lines, and planes. These ideas will all be postulates. List the postulates below:

2.1

2.2

2.3

2.4

2.5

2.6

2.7

*Example 1:* Determine whether the statement is *always*, *sometimes*, or *never* true.

a. Points  $E$  and  $F$  are contained by exactly one line.

b. There is exactly one plane that contains points  $A$ ,  $B$ , and  $C$ .

c. Planes  $\mathcal{R}$  and  $\mathcal{T}$  intersect at point  $P$ .

*Example 2:* Given that  $\overleftrightarrow{AC}$  intersects  $\overleftrightarrow{CD}$ , write a paragraph proof to show that  $A$ ,  $C$ , and  $D$  determine a plane.

*Example 3:* Given that  $M$  is the midpoint of  $\overline{XY}$ , write a paragraph proof to show that  $\overline{XM} \cong \overline{MY}$ .

*Theorem 2.1*

Problem Set:

“THE FIRST PRECEPT WAS NEVER TO ACCEPT A THING AS TRUE UNTIL I KNEW IT AS SUCH WITHOUT A SINGLE DOUBT.” - RENE DESCARTES